

# AVIATION

*The Oldest American Aeronautical Magazine*

DECEMBER 10, 1923

Issued Weekly

PRICE 10 CENTS



Training planes ready for the day's work at the naval air station, Pensacola, Fla.

United Press, U. S. Navy

VOLUME  
XV

## SPECIAL FEATURES

NUMBER  
24

COMMERCIAL AVIATION IN 1923  
RADIO TELEPHONE FOR AIR MAIL PLANES  
TWO PIONEERS OF AMERICAN NAVAL AERONAUTICS  
METAL CLAD VS. FABRIC COVERED RIGID AIRSHIPS

THE GARDNER, MOFFAT CO., Inc.  
HIGHLAND, N. Y.  
225 FOURTH AVENUE, NEW YORK

# ADAPTABILITY

## Thoroughbred and Draught Horse in One

From a 7-ton flying boat to a single seat fighter is the useful range for Wright "T" Engines. The procurement of engines must be planned long in advance of the construction of planes. Therefore, the adaptability of an engine for use in many types of planes is the most reliable safeguard for the purchaser.

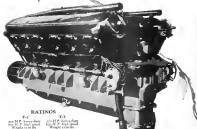
Wright "T" Engines have been installed in 8 different types of planes. Two of these types are single seat land fighters used as racers; one is a single seat sea plane; one a twin engine long distance boat; four are combined land and sea planes usable for bombing, torpedo, observation, cross-country, and spotting purposes.

Only the wide experience of the Wright Organization in correct aeronautical engineering practice and design makes possible this reliable versatility in Wright Engine Performance.

WRIGHT AERONAUTICAL CORPORATION  
Foster, New Jersey, U.S.A.



Wright "T" Engines are being used in the multi-engine Navy D-7-D flying boat. Wright "T" Engines were worthy competitors in the recent races for high speed single seat planes both land and sea. They are equally well adapted for the versatile planes such as bombers, observation planes and two-seaters.



RATINGS

T-1  
Max. H.P. 150  
Wright 150 H.P.  
T-2  
Max. H.P. 150  
Wright 150 H.P.

# WRIGHT T MODELS ENGINES

DECEMBER 10, 1932

# AVIATION

VOL. XV, NO. 24

Published every Monday

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Entered as second-class matter Nov. 22, 1920, at the  
Post Office at Highland, N. Y., under act of March  
3, 1879.

## Commercial Aviators ATTENTION



### YOU CAN MAKE MONEY WITH THIS SHIP

#### IT DRAWS THE CROWD WHEREVER IT LANDS

This is the new-designed Republic SKYLARK, designed and built by G. W. Town, the well known builder of successful planes. Equipped with two brand new 200 h. p. six cylinder Liberty engines. Can carry about 125 gallons. Wings open 51 ft. 2 in., length over all 38 ft., height about 12 ft. Cruising speed at 1500 r.p.m., 75 m. per hr., full speed about 90 m. per hr. Rate of climb 1000 ft. in 3 minutes. Landing speed 40 m. per hr. Taken off in short space required for landing.

The SKYLARK has landed in mountains at 5200 ft. elevation and got off without any trouble. With full load of gas and no passengers she flew straight 6000 ft. in 30 minutes without stop. She has been seen over 15000 ft. Has maintained altitude on one engine. A recent test trip from Santa Monica, near Los Angeles, to San Diego, about 140 miles, was made in 10 hours.

This is a splendid ship for business, it has been put in absolutely first class condition all over by expert mechanics. As the SKYLARK is too large for any private use, will sell at P. O. B. Glorier Flying Field, Santa Monica, Cal. at an attractive price. My pilot will deliver ship on its own power for a reasonable sum.

A. L. MARKWELL

302 CITIZENS NATIONAL BANK BLDG.,

LOS ANGELES, CALIF.



TEAM MARK

## NATIONAL AIR

Independent authorities agree that the airplane is now ready for commercial transportation. A Martin Bomber, for instance, carrying 1600 pounds in addition to passenger weight, recently developed an average speed of more than 114 miles per hour.

Railroads have worked for years to clip minutes from their schedules. Present policy is even reducing rather than increasing speed. Travel by rail seems to be fixed for a long time to come

at 60 miles per hour.

How will the development of the airplane affect the country? The railroads welded a loosely federated group of states into a nation. How closely knit will this nation become when its very air is nationalized?

Martin men not only feel the responsibility of maintaining their own leadership - but also the obligation, and the privilege, of building soundly for a whole people.

**THE GLENN L. MARTIN COMPANY**  
CLEVELAND

*Builders of Quality Aircraft since 1909*

L. D. GARDNER  
PRESIDENT  
W. D. MONTY  
VICE-PRESIDENT  
L. D. WILSON  
TREASURER  
GLENN L. MARTIN  
PLANT MANAGER

# AVIATION

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VICTOR E. CLARK  
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EDWARD F. WARDEN  
EDITOR  
RALPH H. WOOD  
CONTRIBUTING EDITOR

Vol. XV

DECEMBER 10, 1923

No. 24

### Encouraging Light Plane Development

**I**F the movement recently launched by the National Aero-Club Association with regard to next year's national trip results in reference to made to the possibility of also having a light plane competition "it sufficient interest is shown by those concerned."

That there exists in this country considerable, though perhaps not yet coherent, interest in the light plane is evident from the numerous letters and inquiries American is receiving from various quarters. This interest deserves the hearty support of all those who are concerned with the progress of aviation development. But American and such aviation, which we hope will be offered for an American light plane competition, are only one form of encouragement. Another, and yet the most important, is that the rules of a light plane competition be drawn up in such manner as to bring forth genuine progress. And here we cannot help but take exception to the N.A.A. suggestion that the light plane competition proposed for 1924 be open to machines with engines having a maximum plane displacement of 50 cu. in.

The wonderful performance accomplished by British light planes at the Lygones most were made with a maximum engine capacity of only 45.75 cu. in., while for next year the British Air Ministry contemplates holding a competition for two-seater light planes limited to 37.1 cu. in. Regardless of the different engine ratings used in this country and in England—what by the way would favor us—a maximum plane displacement of 50 cu. in. for an American light plane competition seems to us like a public acknowledgment of our backwardness in this line of aeronautical development. If, on the other hand, we are assuming that the proposed American competition is one for single-seaters, although the displacement of 50 cu. in. even seems too generous for two-seaters if we are to be made as light plane competition.

There is also the question whether the system of rating light planes by their cylinder capacity or their piston displacement is entirely fair or even desirable. Two engines may have the same piston displacement and yet one of them, by using a higher crankshaft speed and a higher compression ratio, may develop very much more power than the other. The would all be to the advantage of the engine and its owner, if it did not also mean a larger fuel consumption. As it is in the latter case which cuts into the pocketbook, and so primarily interests the light plane user, it seems to us that the competition should be made the basic criterion of light plane design.

The Grand Prix for light planes held near Paris last summer offers an instructive example in this connection. Those competing machines were limited in net weight to 550 lb., not including the pilot, but including 44 lb. of gasoline and 6 lb. of fuel. This fuel allowance the machines had to satisfy a minimum climbing test of 1500 ft. in 30 sec., and fly, in

the race proper, a maximum distance of approximately 200 mi. The plane covering the greatest number of laps is crown of this distance was declared the winner.

We believe that the "formula" offers an excellent working basis for drawing up rules governing the proposed American light plane competition.

### Aerial Touring in England

**L**AURENCE SPERRY is touring England in his "Horse" plane. He is perhaps a little in advance of the times, but the shapeliness of his true flyer has always been one of the attractive features of his charmed life, not to give full credit to his competitive skill. It is needless to mention that the apparently young pilot has been flying for eleven years.

His latest trip abroad is typical of the way in which he travels. He put his little plane aboard ship with his trunk and had it put ashore at Plymouth. He flew to Crofton and is now doing just what he does at home—he flies to every place he wants to visit. In a recent letter he tells of the pleasure of an aerial tourist in England.

"The airplane is a healthy way of traveling over here—much better than hanging around London, as it takes one out in the different golf courses and gives one the very best opportunity of seeing the beautiful English countryside."

"Crofton is a joy, and a wonderful example. I landed there, and instantly three golfing companions wanted to fill my tank. I wanted to go to Haverford Down Golf Club and it did not take me five minutes to get a map and get the trip organized—it is just like touring Europe in a Rolls-Royce—the man could not wait my baggage, and I show my airplane for fifty cents a day—average showing a place in the United States for fifty cents a day! When I stayed at the golf club over night the Crofton officials telephoned to inquire if I was coming back so they were keeping their night equipment in for me. You can buy gasoline at any crofton in England."

It is refreshing to read of such pleasure and convenience all we in this country can do is to hope and pray.

### Here and Abroad

**T**HE critical condition of the Army Air Service, caused by a depleted personnel and equipment, is being constant to the situation of the British and Italian air forces which are rapidly being brought up to their wartime power.

The picture of the Italian air force review near Rome and the outline of the British air force expansion which appear in this issue, furnish much food for thought in view of our aerial helplessness.









# Two Pioneers of American Naval Aeronautics

Comdr. J. C. Hunsaker, U.S.N., and Comdr. H. C. Richardson, U.S.N.

In view of the considerable strides made in American Naval Aviation during the present year, it is fitting to give here brief biographical sketches of the two naval officers who have borne a very large share in this development—Comdr. J. C. Hunsaker and Comdr. H. C. Richardson.

## Commander Hunsaker

Comdr. James C. Hunsaker, U.S.N., who left the Bureau of Aeronautics, Washington, Nov. 24, in 1925



Comdr. J. C. Hunsaker, U.S.N. (CC.)

Aircraft Division, Bureau of Construction and Repair, Navy Department, and under the Chief Constructor's division responsible for the carrying out of the Naval aviation program as the former of which, as a member of the Joint Army and Navy Technical Board, in 1917, he assisted. The commander Hunsaker belongs to the class of designers the U.S. makes unique products in this country, as well as the U.S. and D. also entered aviation, and the rigid 241, now the standard. He also designed together with Comdr. Holden C. Richardson



Comdr. H. C. Richardson, U.S.N. (CC.)

London, England, where he has been appointed Assistant Naval Attaché at the American Embassy, was born at Orono, Maine, in 1888, the son of Walter Z. Hunsaker and Anna L. (Clarke) Hunsaker. He received his early education in the public schools of Detroit and Eugene, Me., and from 1904-08 attended the U. S. Naval Academy. During the year 1909 he sailed as a Midshipman in the U. S. Navy. From 1909-12, he took a post graduate course in Naval Architecture at the Mass. Inst. of Tech., and in 1912 was appointed Assistant Ship Superintendent at the Boston Navy Yard.

Commander Hunsaker's activities in aeronautics began in 1915, when he studied aerodynamics abroad. Returning to the United States, he was engaged from 1915-16 as Instructor in Aeronautical Engineering and Research in Aerodynamics, at the Mass. Inst. of Tech. Application of the results of aerodynamic research in the design of American aircraft was initiated by Commander Hunsaker, first by his investigation and making available Ediff's work, "Resistance of the Air," and later by creating the first wind tunnel at the Mass. Inst. of Tech. Under his direction, original research was conducted at the Mass. Inst. of Tech., and the findings were put at the disposal of American aircraft designers. He also trained in aerodynamic engineering many groups of graduate engineers, who, when the United States entered the war in 1917, were placed in charge of the technical services of the Army and the U. S. Navy, and in the U. S. Navy, he was then appointed

and George C. Western, the NC type of flying boat which was the first aircraft to fly across the Atlantic Coast, in recognition of his distinguished services, Commander Hunsaker was awarded the Navy Cross. In addition to translating Ediff's work, Commander Hunsaker has written the following books: "Stable Rotor Airplane," "Aerodynamic Properties of the Triplane," and "Aeroplane Stability." He is a member of the American Society of Naval Architects and Marine Engineers, Aeronautical Society, Hon. Fellow of the Royal Aeronautical Society of Great Britain, U. S. Naval Institute and the Army and Navy Club.

## Commander Richardson

Comdr. Holden C. Richardson, (CC), U.S.N., who has been appointed to fill the place left vacant by Commander Hunsaker in the Design Section of the Bureau of Aeronautics, was Chief Engineer of the Naval Aircraft Factory at the time of his appointment. Commander Richardson is the son of William S. Richardson and Elvira S. (Duffy) Richardson. He was born at Pleasanton, Pa., Dec. 5, 1887. After graduating from the University of Pennsylvania in 1906, he entered the U. S. Naval Academy, from which he graduated in 1910. From 1910 until 1914, Commander Richardson acted as an officer in the U. S. Navy. For three years subsequently he was in the U. S. Navy, East of the U. S. Coast, as Assistant, Sup't. of Construction, at Newport News, where he re-

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turned from 1917-18. From this until 1921, his activities were: 1917-18, Naval Constructor, Philadelphia Navy Yard; 1918-19, Bureau of Construction and Repair, Aviation; 1919-20, construction Officer, Naval Air Station, Pensacola, Fla.; 1920-21, Superintendent, Construction Bureau, BuAer, S. C.; 1921-22, Chief Engineer, Naval Aircraft Factory, Philadelphia.

Commander Richardson has been prominently identified with aviation as a pilot and engineer since 1922. He was an outstanding figure in the transatlantic flight of the NC-14, a type of aircraft he helped to design, by acting as a pilot of the NC-14 on its historic overseas flight from Norfolk, N. Y., to Plymouth, England. Commander Richardson has been one of the following stations: San Diego, Annapolis, Hatteras, Portsmouth, Philadelphia, Norfolk, N. H., and Philadelphia. For his meritorious service in recognition of the notable part he played in the American transatlantic flight expedition, named him an Officer of the Tower and Award, Portugal. He is rated as Naval Aviator No. 15, U. S. Navy. He is a member of the following clubs: Army and Navy Club (New York) and Naval Architects and Marine Engineers.

## The National Guard Air Service

The annual report of the Chief of the Military Bureau, published last, lists the National Guard Air Service units formerly reported on June 30, 1925, as follows:

|      |                                     |    |  |  | Enlisted men. |
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| 1924 | Observation                         |    |  |  |               |

The strength figures cited above show a gain of 5 officers and 101 enlisted men over the figures for June 30, 1922. Only one new squadron was recognized in the past fiscal year—the 11th Observation Squadron, Santa Barbara, but two new squadrons covered by last year's report have been transferred to a divisional status. The 12th Squadron in Alabama transferred the 11th Squadron to the 10th Division, and the 20th Squadron in Indiana was transferred to the 9th Division and changed its designation to the 12th Division Squadron.

The observation squadrons pertaining to the 43rd Division was, in accordance with an agreement between the State authorities, transferred from Rhode Island to Connecticut, and the latter State governs the present organization of the unit. The States of Michigan, Missouri, and Colorado are also making to present observation squadrons for Federal recognition during the fiscal year 1926. These units will function with the 20th, 30th, and 40th Divisions, respectively. The State of South Carolina has taken over from North Carolina the organization of the air service for the 5th Division, and it is hoped that these units can be formed during 1924.

The training of the National Guard Air Service units during the past fiscal year has not progressed materially, due mainly to differences in the ages of squadrons, and to the fact that some States have only recently received their flying equipment. With the limited funds available it is impossible to supply the divisional squadrons of the National Guard with service type airplanes, but it is the desire of the Military Bureau that National Guard squadrons in their flying training to develop their pilots that all may qualify to service type airplanes during the annual maneuvers. This has been fully accomplished by one squadron and partially by several others. At the request of the Chief of the Military Bureau, the Chief of Air Service has established a special summer course of primary flying instruction for National Guard officers who are physically qualified and who are under 30 years of age. It is believed that this will also help in the replacement of flying personnel. National Guard pilots have averaged more than one hour each per week's flying time, in addition to approximately 15 hr. each during the summer maneuvers.

The units are carrying on both conventional and individual training for officers and men. The individual training is conducted by means of lectures and ship and field work in addition to military training. The aim is the individual training of the enlisted men in the development of all the specific necessary for the efficient functioning of a divisional Air Service. The training of the flying personnel continues practically all of types of flight maneuvers performed by divisional Air Service.

## Successful Vertical and Horizontal Flight



Left, M. Eugene Oshkosh, inventor and pilot of the helicopter bearing his name, in the pilot's seat. Right, the machine in vertical flight during trial flight at Los Angeles, France where the helicopter crossed a circular course, returning to its starting point. The flight was made at an average height of from 10 to 15 ft.







A busy assembly plant—Finsch engineering work in progress of assembly and finished planes in the assembly plant of the Glenn L. Martin factory in Cleveland, Ohio, during Navy Dept celebration.

#### Aeronautics Plant Almost Inactive

Within the past few weeks Aeronautics Plant 3, Major Co., of Keyport, N. J., will have completed the Army contract for the Glenn L. Martin factory in Cleveland, Ohio, during Navy Dept celebration. The last two planes on the order are now in course of erection. As the result of completion of this contract and the fact that the company has no other airplane production orders on its books, a large number of skilled mechanics have recently been released. Road patterns, jigs, dies and erecting ladders used in constructing the Martin Bombers, which cost the company thousands of dollars, are now idle and occupy a large floor of the plant which it is understood will be devoted to other manufacturing purposes unrelated to aircraft. It is known that no provision has been made by the Government to utilize or store the production fixtures referred to. They are now of no value to the company and will be disposed of at salvage prices for scrap metal and lumber.

Outside of a small amount of experimental and engineering work, the airplane division of the company is presently at a standstill. The second of the two right flying and planes ordered by the Post Office Department is now nearly completed and the company is doing some very interesting work for the Army on a variable distance land mine device of Paul G. Bismarck, chief airplane engineer. The work is accomplished by the company in developing dynamite construction in the type ABC metal-bell commercial flying boat and the night flying work planes has given them valuable experience and equipment facilities for this kind of work.

The Aeronautics Plant is now nearly completed and the construction of the airplane division is now nearly completed and the boats are now at the Keyport Plant for overhaul while awaiting delivery to the Navy. The boats are now at the Keyport Plant for overhaul while awaiting delivery to the Navy.

The motor division of the company, which is located in a modern concrete and steel structure, is engaged in substituting a number of its components. Liberty engines with new cylinder blocks and other parts about the crankcase which will increase the horsepower from 400 to 500. Work is also going ahead on an order for the Aeronautics Model 1933 200 hp engine which is now in the Navy.

A considerable part of the Aeronautics plant at Keyport is now devoted to building motor bodies for Cadillac automobiles.

#### Chicago News

By Otto Klein

G. W. Gardner and Mr. Harkness, a druggist, greatly agitated their night flight, taken during the recent 100-mile race. The two men flew the plane to the Lake Shore, where they took some photographs of the brightly illuminated Wright building. The two men were in the field for the first time, but no landing lights were used. W. M. Harkness, who piloted the ship on both trips, landed as smoothly as he does in broad daylight.

The writer, in company with E. R. Harkness, flew over the football games at the Loyola and Northwestern universities Saturday afternoon, Nov. 23, displaying as of and dropping leaflets.

John Harker and LaVerne Crawford, accompanied by friends, flew their Curtiss to Rockford, Ill., Sunday morning, Nov. 25. They made the day carrying passengers.

One Polaris had purchased a Curtiss "40" which he will modify to take an OX, in place of the Harkness. He has had a previous ship where he will begin work at once.

There has been considerable air and much hanging over the air all week which made flying very unpleasant. For the present there has been little activity at the field, other than the usual passenger carrying and pleasure trips by the "Harkness."

#### Surrender Flying

According to the New York Times, R. F. Conrad, a former pilot, and Harold Winkler, both of 100 miles, who with an unidentified woman in an airplane made a 2000 ft. plane to earth near Waukegan, Ill., recently and to get 400 miles because they landed in a field. The woman disappeared after "the crash"—the plane pitched and the men were arrested when they returned to the plane and held all day by a sheriff when they paid the fine.

The same newspaper reported that Sgt. David Ralston, of Brooks Field, Tex., was arrested by the military police in Nov. 25 on the charge of operating an airplane while intoxicated and of transporting liquor in an airplane. Ralston crashed into a tree in a San Antonio residence in a plane while attempting to land, but he was not hurt. Witnesses claimed that a woman leaped from the plane and escaped before the police arrived.

## U. S. ARMY AND NAVY AIR FORCES

### Time Extension for Joining A.S.O.R.C.

The War Department has extended for one year the period in which veterans of the War of 1914-18 are eligible for appointment without examination other than physical in the Officer Reserve Corps to a grade not higher than that first held by them. Notification is that effect has been made by all Corps Area and Department Commanders.

The previous time limit on this class of appointments expired Nov. 31, 1951. This date was fixed in 1920 during preparation of the Regulations for the Officers' Reserve Corps, which were published Aug. 3, 1920. It was then thought that in two years there would be demonstrated such information regarding the nature and requirements of the Officers' Reserve Corps that all interested would be afforded an opportunity to apply for commissions.

However, unexpected delays were encountered. The work of building up the Officers' Reserve was hampered by numerous reductions of the Regular Army and by curtailed appropriations. As a result, the reception and assignment of Officers' Corps officers did not get under way as any number of other units until 1933, when Regular Army officers were assigned to duty with the Officers' Reserve. Not until then was work resumed with many of the officers of the World War who remained with the War Department had ceased upon their demobilization.

These officers had found it necessary as a rule to substitute all other interests to that of their re-establishment in civil life. Many were not in a position until late in 1933 to determine whether they could devote the required time to further military preparation. The number of applications in the past few months is an indication that they are now becoming able to make the decision of making their services available in our new defense system.

The following table gives the strength at the end of each month of this year:

|          |        |           |        |
|----------|--------|-----------|--------|
| January  | 30,514 | July      | 50,000 |
| February | 31,000 | August    | 50,000 |
| March    | 31,500 | September | 50,000 |
| April    | 32,000 | October   | 50,000 |
| May      | 32,500 | November  | 50,000 |

The total increase during the present calendar year will probably more than double that of 1951. The increase during 1951 was 6,500. The increase for the first ten months of this year is 3,514 with November promising to be the record.

month, as during the first ten days more than 2,500 appointments were received.

The War Department has concluded, therefore, that no increase of the time limit for admission of former officers to the Officers' Reserve Corps without examination other than physical will afford opportunity to many World War officers whose experience will constitute a valuable asset to our national defenses. That these officers are themselves desirous of this additional opportunity is indicated by the numerous indications made by the Officers' Association in their annual convention at Denver, Mich.

### Searching for a Lost Reconnaissance Party

A report recently received from the Hawaiian Department tells of a search made by pilots of the 17th Composite Group, stationed at Wheeler Field, for a reconnaissance party sent out from the 37th Infantry, consisting of one officer and three enlisted men, reported to be missing and probably lost in an almost impenetrable region of the Kona Range. These mountains are considered as treacherous and responsible as any in the Territory of Hawaii, due to continuous low overhanging clouds, extremely dense underbrush, constant rain and steep precipitous gorges with perpendicular sides.

On the morning that the Commanding Officer of the 17th Composite Group was notified that the reconnaissance party was long overdue and was ordered to send out searching planes, he had plans in the air 40 miles away. The search was made at 6:45 a. m., and during the morning three days planes were continuously flying around the range. Only on a few occasions were they able to cross over the edges of the range and shade. All overviews of planes on these mountains reported extremely unfavorable weather conditions, and several reported that they had only narrowly escaped crashing. Some pilots lost control and dropped hundreds of feet into gulches before regaining mastery of their ships. One officer reported a single drop of approximately 250 ft. Altogether thirty flights were made in three days.

The report states that the flights were substantially carried on in spite of the difficulties and continued danger, and that they were made without incident, indicated that the group is well trained and maintained, and is prepared to carry out its mission.

No mention is made as to whether the reconnaissance party in question was eventually located.



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